



WaterTechw² pH8000

pH Dip Sensor

PRODUCT DATASHEET

APPLICATIONS

Intake Protection
Discharge Monitoring
Activated Sludge Control
Coagulation Control
Final Water
River Monitoring
Industrial Effluent Control

MEASUREMENT PRINCIPLE

Combination Double Junction ERP pH
Electrode

FEATURES

Built-In Temperature Compensation
Self Cleaning Flat Surface Electrode
Enhanced ERP Reference System
Mercury (Calomel) Free

BENEFITS

Improved Effluent Quality
Reduced Operating Costs
Longer Time Between Calibration

INSTALLATION OPTIONS

Self Cleaning Flexible Coupling for Dip
Assemblies

COMPATIBLE MONITORS

7300w² Monitor

ALTERNATIVE SENSORS

WaterTechw² pH8000 Flowcell Version



Measuring pH is a vital part of control systems throughout water, wastewater and process industries. In activated sludge plants, the biological process is greatly influenced by the acid or alkaline condition of the mixed liquor; on-line control is vital to maintain effluent quality. In effluent discharge regulations, pH is the most common water quality parameter; giving vital feedback on plant performance and protecting the environment from pollution events.

In sewage and industrial effluent treatment, pH control is vital for ensuring that pollutants are removed effectively. When the pH moves away from a neutral position the biological activity of the bacteria reduces, at less than 5pH or greater than 10pH then the activity ceases and the treatment system will start to breakdown. In combination with the 7300w² Monitor we provide the monitoring and control functionality to ensure that the control system remains functional and is carried out in the most cost effective manner.

pH monitoring and control also plays a vital role in the success of potable water treatment. If the water is acidic (lower than 7), lime, soda ash, or sodium hydroxide is added to raise the pH. Lime is commonly used for pH adjustment for municipal water, or at the start of a treatment plant for process water, as it is cheap, but it also increases the ionic load by raising the water hardness. Making the water slightly alkaline ensures that coagulation and flocculation processes work effectively and also helps to minimize the risk of lead being dissolved from lead pipes and lead solder in pipe fittings. Acid (HCl or H₂SO₄) may be added to alkaline waters in some circumstances to lower the pH. To ensure correct treatment, it is necessary to monitor as well as control the optimisation of the chemical dosing.

The WaterTechw² pH8000 sensor has been designed to provide highly reliable operation across the range of drinking water and wastewater applications. The flat faced electrode included the latest innovations in double junction reference with the ERP reference path.

For installation in applications where gross fouling is anticipated we recommend that the sensor is installed using our specially designed mounting system, with a flexible joint in the mounting shaft. The flexible joint moves the sensor in the process, reducing bio-fouling and allowing rags to fall away from the assembly. This motion is similar to that achieved by using a floating ball assembly, with the added advantage of placing the sensor below the surface of the liquid. In applications where fouling is not expected or where there is insufficient space alternative mounting arrangements are available.

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WaterTechw² pH8000

Electrode Details

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New ERP Reference
Extended length reference path to
slow contaminants

Flat Surface Self Cleaning
Electrode resists coating and fouling

Acryl-2 Gel
Heavy Duty Gel resists chemical attack

Increased Gel Capacity
For longer sensor life

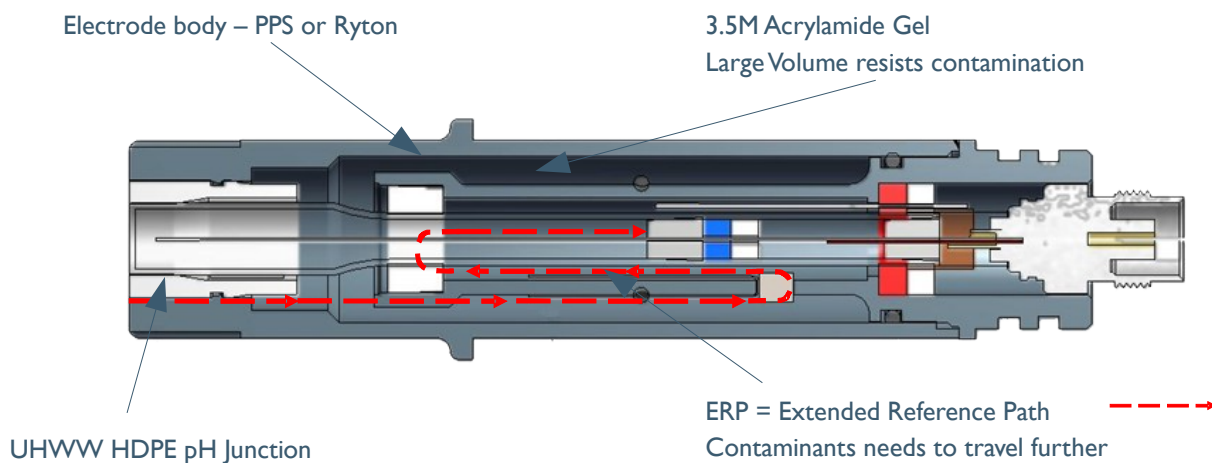
Double Junction Reference
Greater durability in harsh
environments

PPS (Ryton) Construction
Improved chemical and temperature
performance



The WaterTechw² pH8000 Sensor has been designed to provide highly reliable pH and Temperature measurements. The sensor uses a flat surfaced electrode which includes an extended reference path, these features combine to provide an extremely robust pH measurement, suitable for use in surface water, waste water and drinking water applications.

The electrode uses field proven flat surface, self-cleaning technology. The reference system is enhanced by the Extended Path Reference (ERP) design which provides a complex path to protect the reference in the presence of interacting ions such as proteins, silver and sulphides.



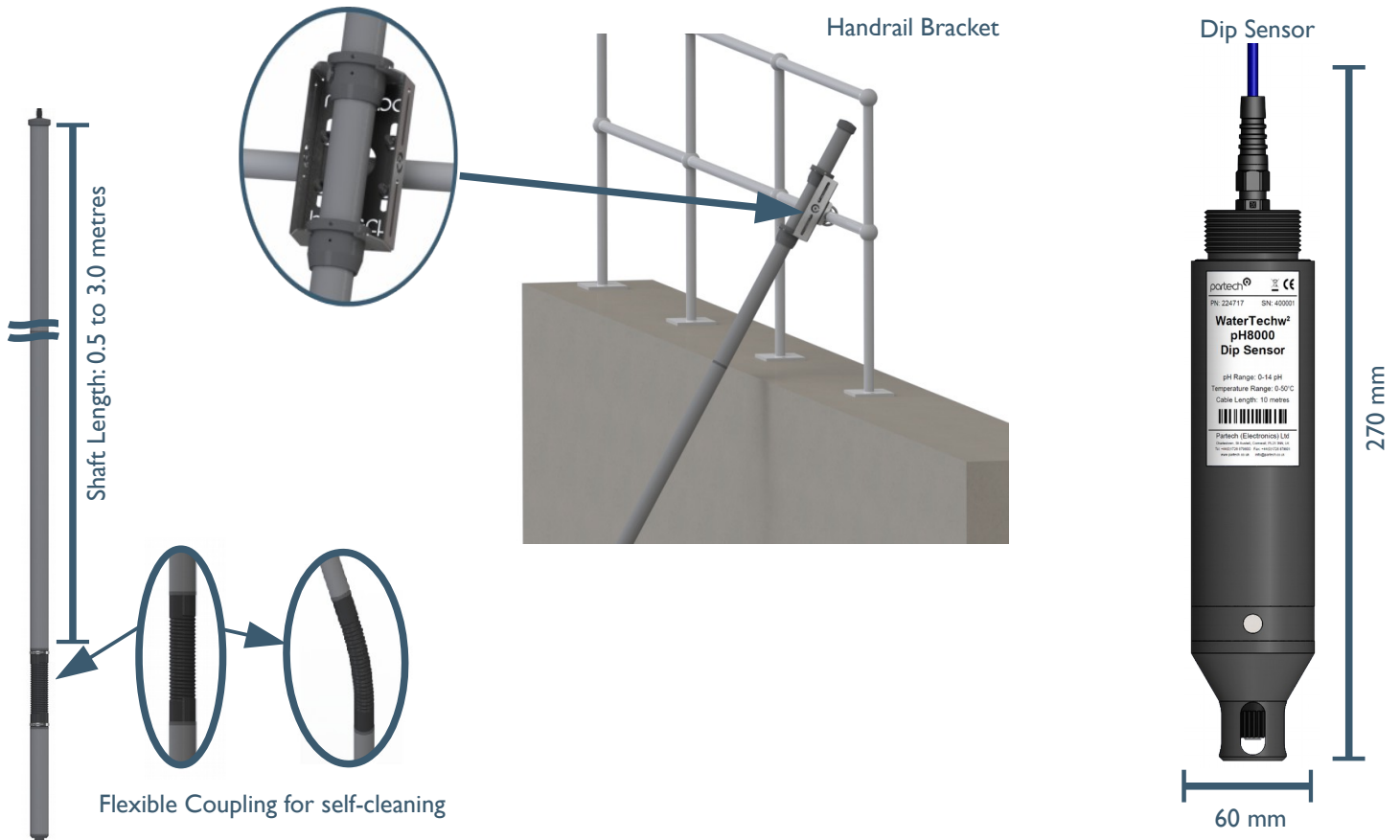
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WaterTechw² pH8000

Dip Assembly

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Shaft Assemblies

When used in dip format the WaterTechw² pH8000 sensor can be supplied with a shaft assembly and accompanying handrail/wall brackets. These parts have been designed to be suit the majority of installations, alternatives and bespoke solutions can be supplied if necessary. Shaft lengths up to 3 metres are offered as standard with longer lengths being catered for when required subject to safety and shipping considerations.

Self-Cleaning Flexible Coupling

In applications where fouling is likely we offer a flexible coupling in the mounting shaft, as illustrated above. This coupling allows the sensor to move in the flow, this means that fouling does not get a chance to build up on the electrodes flat face. Ragging is also swept away from the assembly by the flow rather than wrapping round the shaft. This method of cleaning has consistently proven effective and at a much lower cost than complex air purge or water jet cleaning alternatives.

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WaterTechw² pH8000

pH Dip Sensor

PRODUCT SPECIFICATION

Measurement

Accuracy
Resolution
Range
Measurement Principle

Cable Type
Cable Length
Service Requirement

Electrical

Power Supply
Interface to Monitor
Cable Entries

Environmental Data

Operating Temperature
Storage Temperature
Pressure
Location

Physical (Dip excluding shaft)

Dimensions
Weight
Protection Class
Enclosure Material
Electrode body

Mounting

Installation Type
Mounting Shaft
Handrail Attachment

pH

+/- 0.05 pH
0.01 pH
0 – 14 pH
pH:

Temperature

+/- 0.5°C
0.01°C
0 – 70°C
Combined electrode (pH/reference), Ag/AgCl reference, Gel Electrolyte (Acrylamide), Double Junction ERP Reference
Temperature: NTC (Negative Temperature Coefficient Thermistor)

4 core, 2 Twisted Pair, 5mm O/D Polyurethane Coated
10 metres standard, 100 metres maximum
Electrode Replacement
Periodic calibration and cleaning are required at a frequency determined by the application

12 Volts from Monitor
RS485
Integral Cable Gland

0 to 70°C
0 to 70°C
7.5 Bar, de-rated at higher temperature
Indoor/Outdoor

60 mm diameter x 270 mm long
0.95 kg (inc 10 metres of cable)
IP68
Black PVC with Nylon Cable Gland
PPS (Ryton)

Dip
1 to 3 metres in 1 metre increments
See Document 223980DS, 224567DS, 132582DS, 132570DS for options

Order Codes

Part No	Description
224717	WaterTechw ² pH8000 Dip Assembly includes pH Electrode and Temperature Sensor (0-14 pH, Temperature Range: 0-50°C, Cable Length: 10 metres)
224718	WaterTechw ² pH8000 Dip Assembly includes pH Electrode and Temperature Sensor (0-14 pH, Temperature Range: 0-50°C, Cable Length: 20 metres)

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The company reserves the right to alter the specification without prior notice. E&OE

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